The Public Health Journal

VOL. X. AUGUST, 1919 No. 8

Sanitation in War*

JOHN W. S. MCCULLOUGH, M.D., D.P.H.
Chief Officer of Health for Ontario

IN every war the soldier faces two enemies; the one is the armed forces of the foe, with their terrible engines of destruction, the other the silent and in the past the far greater foe, the grim purveyor of death—disease. The history of warfare for centuries has shown that of these two enemies the one or open enemy causes much the greater mortality.

War Statistics.—According to Longmore's tables giving the statistics of war and which are based on the records of battles for the past two hundred years the usual story has been that four men have died from disease to every one from bullets. In the Russo-Turkish War, 80,000 men died from disease and 20,000 from bullets. In the Crimean campaign it is stated on eminent French authority that the Allies in six months lost 50,000 soldiers of diseases, and only 2,000 from casualties. In 1894 during the French campaign in Madagascar, of 14,000 men sent to the front, 29 were killed in action and 7,000 succumbed to disease, most of which was preventable. In the Spanish-American War in a campaign of six weeks the deaths from war casualties were 293 and those from disease 3,681, or nearly 14 to 1. In the Boer War, there were 7,154 deaths from enteric fever alone, or more than from all other casualties combined.

In comparison with the foregoing figures it is stated on the authority of the Japanese Minister of War that in the Russo-Japanese War from February, 1904, to May 1905, the total deaths from casualties and wounds were 52,946 or nearly nine per cent. of the army, while the total deaths from sickness amounted to 11,992 or only two per cent. of the forces in the field.

*Read at the Meeting of the Canadian Medical Association, Quebec, June 26th, 1919.

The Japanese Record in Sanitation.—In the war with China the Japanese losses from disease were far greater than from casualties. That the Japanese were able ten years later to completely reverse the record as between wounds and disease is said to be due: (1) "to thorough preparation and organization for war; (2) to the simpler non-irritating, easily digested ration supplied to the troops, and (3) because of the brilliant part played by the members of the medical profession in the application of the principles of sanitation and the prevention of communicable disease in the army."

For the purposes of preparation and organization the Japanese government sent her students all over the world to study the army systems in vogue. From the knowledge thus gained she developed a system of her own based upon prevention rather than treatment. The medical department was organized on broad generous lines and its representatives given the rank and power their responsibilities merited recognizing that they had to deal with a foe which previous history showed was responsible for eighty per cent. of the mortality. Japan's medical officers were graded as high as the officers of the line who combat an enemy who is responsible for only twenty per cent. of the mortality. At home she organized the most splendid system of hospitals that had ever been devised for the care of the sick and wounded, and with the army at the front she established the most elaborate and effective system of sanitation heretofore found in connection with any army. The Japanese were the first nation to adequately recognize the true value of an Army Medical Corps. Her students had studied the methods of the best medical schools of western civilization. These methods were adapted to the needs of the army. They saw that in order to make their armies effective in the field preventable diseases must be controlled. They established institutions for the study of infectious diseases, and for the manufacture of serums and vaccines necessary in the prevention of disease. They discovered the germs of lockjaw and the plague and developed a preventive treatment for these and other affections. They recognized the value of cleanliness of the body and every soldier went into action with a clean body and clean underclothing. They had learned the lesson which previous to the Boer War, Britain had failed to apply, viz: that water carries disease and should be purified by boiling. The food supplied was designed to meet climatic conditions. Wounds on the battlefield were, except in emergencies, treated only by first-aid dressings. In the Japanese Army, prevention to the smallest detail was carried out. There was the most careful supervision of rations, clothing and shelter of the units. The Japanese medical officer is omnipresent. He is with the first screen of scouts testing and labelling wells so that the army to follow shall drink no polluted water. Coming to a town there ensues a

thorough examination of its sanitary condition and if infection is found, the premises where it exists are quarantined and placed under guard. No soldiers are billeted where danger from communicable disease is found. All fever cases have the blood examined. The fruit food and vegetables for the army use are sampled. If the food is tainted, the fruit over-ripe or the water polluted, they are not allowed to be used. Obedience to the order of the M.O. is absolutely respected.

In the camps the M.O. lectures to officers and men on the details of general and personal hygiene, how to cook and to eat, when not to drink or bathe. The men are even taught how to pare and clean the fingernails. The results are seen in the figures given—*four deaths from bullets to one from disease.*

The South African War.—The Report of the Royal Commission on the South African War relating to the Medical Service gives the impression as remarked by the *British Medical Journal*, "that the system, like that of the rest of the army, was based on the supposition that the grim actualities of war would never have to be faced." One medical witness put it that "the medical service was overworked, undermanned and underorderlied." The Surgeon-General was supplied with a personnel to look after 80,000 men—not enough for even that number, but instead they had to look after 250,000 men besides camp followers, and the work was scattered over half a continent.

Sanitation in War is a broad subject. It is not merely as some seem to think, a synonym for latrines, important as these are, but it practically embraces everything involving the physical welfare of the soldier. It is because of the close attention to every detail of sanitation that the incidence of disease and the mortality of the army have been so much less in this war than in any previous one.

Sanitary Methods in C.A.M.C..—The sanitary methods followed by the Canadian Army Medical Corps were practically the same as those which were found effective by the Japanese. Competent sanitary experts were placed in charge, laboratories established, lectures instituted and all M.O.'s were required to pass an examination in sanitation.

As soon as possible following enlistment, every man was inoculated against typhoid and para-typhoid, and vaccinated against smallpox. The record of inoculation and vaccination was entered on the history sheet, and in the case of inoculation this was repeated at intervals of a year or so during the campaign. Close attention was given to the quality and quantity of food and to the sterilization of dishes and other utensils, such as drinking vessels used in common. In Canadian camps these were boiled after each meal. The canteens were closely supervised and common cups eliminated as far as possible and if any were used they were boiled after each using. In this way we think that the

occurrence of outbreaks of communicable disease, many of which are conveyed from mouth to mouth, are prevented. Provision was made for frequent and regular bathing of the men, the blankets received daily airing and there was provision for sterilization of blankets at regular and frequent intervals. Recognizing that impure water is a cause of diseases like typhoid, dysentery, cholera and other intestinal affections, the water-supplies received the most metriculous attention. All water used was sterilized by hypochlorite or by boiling and it was the duty of the sanitary officer to see that this order was obeyed.

The army sanitarian requires plenty of ingenuity. He has to beg material from ordnance and the engineers. Sometimes he will get it at once, sometimes after a long interval, and often not at all. Col. Balfour of the R.A.M.C. tells the following story:

> "A New Zealand medical unit on a certain island was in need of wood for sanitary purposes. Requisition after requisition failed. Finally the O.C. said to his Quartermaster: 'I want you to indent on Ordnance for a large supply of wood to make tombstones.' 'Tombstones,' said the Quartermaster, 'what do we want with tombstones?' 'Never mind,' was the answer, 'do as I tell you.'
>
> "Next day a cart laden with wood of all shapes and sizes, made its appearance. There was plenty of wood for the dead. There was none for the living."

This war has developed many improvements in the A.M.C. A much-needed addition is an affiliated body of expert sanitary engineers under its control to carry out minor sanitary works which are of the greatest importance.

Some Affections Controlled by Sanitation.—With respect to some of the more important affections with which it has been the duty of sanitarians to cope during the war it may be said that of those perhaps the most satisfactory results have been experienced in respect to typhoid and other forms of enteric fever. As already pointed out this disease had heretofore been the scourge of military campaigns, the well-known experience of the South African and Spanish-American wars being the latest and most typical examples of the destructiveness of this group of affections. In the absence of the protection afforded by such sanitary measures as inoculation and by the sterilization of water supplies, by the care taken of the body excretions and in the exclusion of flies, the probability is that the domestic conditions found in the various areas of war would have produced an epidemic of typhoid and para-typhoid fevers of frightful proportions in the allied armies. The precautions taken by the sanitary service sufficed, however, to reduce the mortality from these affections to a minimum.

Cerebro-spinal Fever, otherwise known as epidemic cerebro-spinal meningitis or "spotted fever", came into prominence in the early days of the war, and Canada has the doubtful honour of being popularly supposed to have transmitted the disease with its first contingent of troops to England, but as there were 272 cases with 168 deaths in England and Wales in 1912, and 304 with 163 deaths in 1913 and an equal number in 1914, it may be safely urged that the most the Canadians had to do with the incidence of the affection in England was to contribute to the existing condition. It has been claimed by the Medical Research Committee's report that while the Canadians did not import a new disease, they did introduce a virulent strain of the causative organism, and were in some degree responsible for its spread. This view, however, has been vigorously controverted by Adami who points out that the strain of meningococcus obtained from the Canadian cases were identical with those isolated from purely British cases. From the same authority I quote that there were in the C.E.F. from 1914 to 1918, 367 cases in all with 198 deaths, a mortality of 54%. In the early days of the war when medical officers were not so conversant with the symptoms of the disease, and when perhaps the crowding of barracks did not permit of such careful isolation as obtained later the mortality was higher. Later on close observation and prompt isolation of carriers as discovered by bacteriological examination proved effective and in Canada at least the mortality lessened very greatly in each succeeding year of the war. There is no doubt also the combination of a larger variety of strains contributed to increase the effectiveness of the serum used in treatment. In an outbreak in any unit the cases were promptly removed to a special ward in hospital, the contacts at once isolated and examined for carriers, and vigorous disinfectant measures used. In this way further outbreaks were effectually prevented. If the same means had been carried out in civil life, the civilian epidemics would have been much reduced and incidentally the danger to the soldier in respect to this affection materially lessened.

Tetanus or Lockjaw, which has its cause in the fouling of wounds with soil containing manure, was a disease much to be feared in countries so intensively cultivated and so heavily impregnated with stable fertilizer as France and Belgium. The precaution of the use of iodine and first-aid dressings to all wounds, however trivial, and the prompt use of tetanus antitoxin contributed in an enormous degree to the prevention of a high rate of mortality from this affection.

Diphtheria, Scarlet Fever, Measles and Mumps are affections likely to spread among men quartered in cities and towns who inevitably mix freely with the civil population in their homes and places of amusement. The three latter are diseases often found among young men in their teens,

who have not acquired the immunity conferred by previous attacks of these diseases. The Canadian soldiers, and particularly the men of the Flying Corps, who came from all parts of Canada and from all quarters of the United States, were particularly susceptible. It was only by the most rigorous methods of isolation and quarantine particularly during the winters of 1917 and 1918 that the proportion of cases and the mortality from these affections was kept within reasonable bounds. Diphtheria is usually observed at an early stage in the army and here is seen the effective value both in treatment and cure of anti-diphtheritic serum. The effect of this remedy too was strikingly observed in cases of infection of wounds in returned men with an organism of a diphtheroid or of a true diphtheritic type. The mortality from diphtheria in the army was comparatively small.

Smallpox, thanks to vaccination, was practically an unknown factor in the Canadian Army in Canada; I personally know of but a single case.

The results of the precautions taken against lice, rats, fleas and other vermin, by means of which trench fever, typhus, relapsing fevers, and other affections are transmitted, are striking examples of the value of sanitary measures. To a Canadian M.O., Major H. Orr, O.B.E., C.A.M.C., O.C. of the Sanitary Section of a Canadian Division, is accredited the honour of developing a simple means for the destruction of lice by baking the blankets and clothing of men at a temperature of 150° F. to 160° F. this heat being sufficient to destroy both the lice and their eggs. This and the utilization of a simple hut steam sterilizer for clothes and blankets designed by Lt.-Col. Amyot, C.M.G. of the Provincial Board of Ontario, have contributed to an extraordinary degree in the comfort and sanitary welfare of our troops.

In the more easterly zones of the conflict such as in Greece and Mesopotamia, diseases such as malaria, the plague and dysentery in both forms prevail. Even here and often under the most trying circumstances the resource of the medical officer sufficed to prevent any but the mildest outbreaks of any of these affections.

Venereal Diseases.—Of venereal diseases in the army there was in the early days of the war a good deal of apprehension on the part of Canadian fathers and mothers. They were concerned as to the dangers to which their sons were exposed in England and France from venereal affections. Previous to the war no effective measures for dealing with these affections were in operation in either Canada or Great Britain, and it was found necessary to employ in the army every practical procedure which experience has proved of value. These are:

(1) Education.—By means of lectures, moving-pictures, etc., the soldier is instructed in personal hygiene, his patriotic feelings respecting the need of the nation are appealed to, he is taught that contin-

ence is compatible with health, the dangers to his family and to his future health and to others are pointed out, he is instructed as to the nature and means of infection of the various V.D. affections and their results. In all a series of five lectures were given by the M.O. to all officers, n.c.o's and men.

(2) Inspection.—There were weekly inspections of every unit, held without notice.

(3) Recreation.—Recreation such as theatres, boxing matches, and various sports were provided under supervision.

(4) Prophylaxis.—The men were instructed in preventive measures.

(5) Early Treatment.—Early treatment centres, open night and day, were provided at every Canadian orderly-room and in addition there were two in London and one in Paris. Further, similar centres for the use of Australian and New Zealand centres were open to Canadians. The men were warned that while both prophylaxis and early treatment are of great value they do not afford absolute immunity.

(6) Penalties.—Half the pay of soldiers suffering from acute venereal disease is docked while the men are on the sick list, and during convalescence they are given fatigue duty and provided with suitable sports.

Results.—The results as shown by the report of the Canadian Sanitary Officer show that in September 1916 from nearly 42,000 Canadian troops in Great Britain there were 960 venereal disease cases; during the month of September 1918 from 110,000 Canadians in Great Britain there were 750 cases. Thus it will be seen in two years the venereal admissions had been reduced 66 per cent.

Within the last year the majority of the Canadian provinces have adopted measures dealing with the venereal problem, and in the course of demobilization through the foresight of the A/D.G.M.S., no soldier is discharged until he has had sufficient treatment to practically secure that he is non-infective. Cases requiring further treatment are notified to the executive officer of the provincial health authorities, and through him the local medical officers of health are given confidential information respecting each case. It thus becomes their duty to direct the man to the nearest district centre or to a Soldiers' Civil Re-establishment for such further treatment as he may require. Since this plan has been adopted in February last there have been approximately 500 cases so instructed in the Province of Ontario.

Col. Adami very aptly remarks:

"It is not the civil population that has to fear the soldier, but the soldier the civil population. Throughout the war the soldier has been well cared for, all means have been employed to diagnose venereal

disease at its very onset, and to give hospital treatment immediately. It is then that disease is most easily controlled. Every soldier has been warned time and again of the dangers he runs, has been instructed as to personal hygiene, and has been afforded early treatment under supervision. As a result there is no section of the community which at the present time is in a cleaner and healthier state; no section of the community which has less venereal disease. I speak here for the whole body of the Imperial forces. As for our Canadian experience, I may say that this autumn the instruction was given that all soldiers returning to Canada whose medical history sheets bore the record of venereal disease should be given the Wassermann test. I have the August figures showing that two per cent. of the total number returning reacted, and all these were tertiary, non-infectious cases, for no active primary or secondary cases are permitted to return. The average number of reactions in the civil population is estimated at from eight to twelve per cent. There is four to six times as much syphilis in the civil population as in the army. But in the meantime nothing of any moment has been accomplished for the civil population. Lord Sydenham in his letter to *The Times* of January 7th speaks of the provision of early treatment centres. 'We are endeavouring,' he says, 'to secure the organization of clinics continuously available where early treatment by competent persons can be obtained.' But they are not available today. They will not at the present rate be available until demobilization—and demoralization—have become a matter of history. To meet the situation they should be scattered thickly all over the country. A man must not have to take a two hours' journey after the act; he certainly will not take it. The dearth of expert syphilologists and of bacteriologists qualified to carry out the delicate Wassermann and other complement fixation tests demands that the centres for ordinary venereal diagnosis and treatment under the Act be few and far between, situated in the great centres of population. It is thus the civil population that today constitute the grave danger."

A serious handicap to the efforts of both army and civilians in the future care of venereal disease cases particularly syphilis, is the expense of the arsphenamine compounds. In Canada the manufacture and distribution of these products are in the hands of two parties who have licences therefor under the War Measures Act. Neither of these parties has any vested right of invention or discovery but the monopoly held by them and the embargo secured by order-in-council against all foreign products keeps the price at a figure ($2.00 per dose) which is almost prohibitive to the ordinary individual and makes it difficult for boards of health or municipalities to provide as they should free and adequate treatment for all.

Nothing produced in any country should in this age be controlled by a monopoly which will enhance the price to the public. If this is true in respect to the ordinary articles of commerce, how much more important that the same principle should govern in respect to an article *necessary to the prevention and cure of one of our most serious communicable diseases.* The members of this Association will be gratified to learn that very soon the monopoly in respect to the so-called Salvarsan remedies will be a thing of the past, because after two years of persistent effort on the part of the Provincial Board of Health it has been announced that a licence for the manufacture of these products will be given to the Province of Ontario, whereupon we hope to produce the remedy at a cost within the reach of the poorest citizen of the country.

And what are the results of the sanitary precautions taken by the Canadian Medical Service?

In the present war the Canadians had about half a million men enrolled. Of these, counting from 1914 to December, 1918, according to official figures supplied by the Department of Militia and Defence, 51,853 died of wounds and but 2,815 from disease. In other words, the deaths from wounds were over eighteen times as great as those from disease.

These are astonishing figures and if they were not official could scarcely be believed when it is remembered that the deaths from disease in the South African War of eighteen years ago amounted to 65% of the total death rate. Note the comparison!—65% as against 5.14%. This record is an achievement which forms the best answer to the criticisms made of the work of the C.A.M.C. The results indicate in a remarkable manner the value of the resources of modern scientific medicine when applied under a well-organized and efficient medical administration. They form an example for civil health administration and are a rebuke to the public which fails to accept well-known sanitary measures which prevent the outbreak of epidemics and their resulting mortality.

Effects of the War on Public Health.—Since every physician in the army is *ipso facto* a health officer, it follows that much practical knowledge of sanitation has been acquired by those who have been medical officers during the war. The men themselves have seen the value of measures of prevention, such as inoculation, vaccination, the protection of water-supplies, venereal prevention, etc. It is not hoping too much to assume that the experiences of both officers and men cannot but be of great importance to the future of public health in Canada.

Personnel.—Canada sent approximately 3,000 medical men to the war. In the Canadian forces there were approximately 2,500 M.O.'s and an equal number of nursing sisters, and to the R.A.M.C. there were supplied about 450 M.O.'s and 350 nursing sisters.

It is with feelings of pride that one reads the story of the medical profession of this country in relation to the war. This record is ably told in Adami's "War Story of the C.A.M.C." It is proper that appreciation of the profession of Canada should be placed on record. No men of any class or profession in the Dominion have sacrificed so much as those physicians and surgeons who gave service overseas. Many of them by reason of age or physical condition might very well have claimed exemption and remained in the practice which has taken years and infinite self-denial to establish. Many of them were mere boys either out of college or with their college courses unfinished. Many, alas! will never return With a noble, unconscious serenity they left their homes and all that was dear to them, and in the glad spirit of youth went forth to aid in saving for their country the priceless gifts of happiness and security which they alone cannot enjoy. Among them were some of the finest types of professional life in this or any country. If we have been saved by their sacrifice the poorest return, but the only one, we can make is to keep their memories enshrined forever in our hearts, and to remember rather the valour and glory of their deeds than the tragedy of our loss. It is for us to keep the faith for which they yielded their lives.

BIBLIOGRAPHY.

[1]Adami. War Story of the C.A.M.C.
[2]Report on the work of the Canadian Medical Services.
[3]Seaman. American Review of Reviews. Vol. 32, 1905.
[4]Seaman. The Outlook, Vol. 79, 1905.
[5]Report of the Royal Commission on the South African War, British Medical Jour. Aug. 1903.
[6]The Century, Vol. 70, 1905.
[7]The British Medical Journal.

The Bacteriology of Swelled Canned Sardines*

WILFRID SADLER, M.Sc.
The University of British Columbia, Vancouver, Canada

INTRODUCTION.—Under the auspices of the Biological Board of Canada, I began an investigation into the "Bacteriology of Swelled Canned Sardines" in the summer of 1916. The work was done at the Biological Station, St. Andrews, N.B., and in the laboratories at Macdonald College (McGill). An Interim Report was published by the Board in 1918[1]; and in March of the same year a short paper was presented to the Food and Drugs Section of the American Public Health Association[2].

A survey of the literature relating to the subject reveals the fact that with few exceptions, investigations into the bacteriology of canned foods have not been undertaken in connection with proved and alleged causes of food poisoning. The exceptions of which I have knowledge are "Microorganisms in the Cannery Industries" by Prescott and Underwood (1897)[3]; "Discoloration in Canned Lobsters", by MacPhail and Bruere (1897)[4]; and "A Bacteriological Study of Sardines", by Obst (1916)[5]. For some reason or other the work of Obst has never been published.

From the food poisoning point of view very valuable researches have been reported by Vaughan[6]; Savage[7], Poels, McWeeney[8] and others.

GENERAL.—It is hardly necessary to say that the sardines of New Brunswick and the State of Maine, U.S.A. are small herrings. This is not the place to enter into a detailed description of the methods of treatment, or the systems adopted in the packing of the fish, and the general procedure of the factories. The one point of which mention must be made, is the temperature to which, after packing and sealing, the cans are submitted. The most common can produced is one weighing from 3 to 4 ounces, and the temperatures given are such as are applied to cans of this size. In the majority of the factories visited at that time, the cans were immersed in baths of boiling water, after sealing, for a period of 1½ to 2 hours. In one or two factories the sterilization consisted of heating for a shorter time under pressure at about 225° F.

MATERIAL.—Swelled canned sardines were secured first hand from many of the canneries, from a city health department in the Maritime provinces, and from various retail grocery stores. A number of apparently normal cans were also secured from various sources.

*Presented to the Canadian Public Health Association, May 28th, 1919.

METHODS.—As far as possible the methods adopted were in harmony with the standard methods of the American Public Health Association[9]. Amended methods however had to be devised in some instances as the work progressed, and certain special media were utilized from time to time. In the isolation of the bacteria from the cans, direct plating could not be practised on account of the oil used in the packing of the fish. After sterilizing the cans with alcohol, the procedure has been to open and remove pieces of fish to tubes of liquid media; from such tubes, subsequent to a period of incubation, plates have been prepared in the usual way.

EXAMINATION OF CANS.—*Normal Cans:* Complete absence of any bulging, top and bottom quite flat or almost imperceptibly concave.

Swelled Cans: Outwardly the cans vary from a slight "bulged" appearance to a more pronounced swelling. The top and bottom are forced out as a result of the pressure, and present a decided convex surface. As the swelling becomes greater, the oil or sauce will be forced out between the soldered parts of the can, and in pronounced cases the outside surface is greasy and wet, and possibly covered with the oil or sauce. Swelled cans, when shaken, have a characteristic "rattle". When the cans are opened, gas is expelled, accompanied in advanced swellings by portions of the liquid contents. The condition of the contents varies considerably. Usually the fish are macerated, disintegrated, and soft, and are intermixed with the oil or sauce; they have lost their entity. The odour is variable—frequently it is not unpleasant, resembling to an accentuated degree the natural smell of normal sardines. In other instances a pronounced putrefactive odour is evident. It may be that the putrefactive odour is present at all times and is masked by the spices or other ingredients of the sauce. That is a point upon which I have no evidence.

BACTERIOLOGICAL DATA.—In the Interim Report[1], the bacteriological findings are discussed in considerable detail. A brief abstract of those findings is presented herein. From the swelled cans, eight strains of gas-producing bacteria have been isolated. These eight strains have been studied morphologically, biologically and biochemically. The organisms have divided themselves into two groups: (*a*) Those which liquefy gelatine and fail to ferment lactose. (*b*) Those which ferment lactose to acid and gas, and which do not liquefy gelatine.

(*a*) The strains of this group—cultures 24 and 37, are motile, coagulate milk, grow well on artificial media, and are facultative anaerobes. The thermal death point is 60° C. for ten minutes, and the optimum temperature for growth is 37° C. Glucose, saccharose, mannite, raffinose, arabinose, xylose, salicin, glycerin, and inulin are fermented to acid and to gas. Both cultures are alkaline to the Methyl Red test, are positive

to the Voges-Proskauer reaction, and reduce nitrates to nitrites. Culture 37 produces ropiness in all the culture media and forms indol; culture 24 does not produce ropiness and does not form indol.

Cultures 24 and 37 have been classified as *B. vulgaris* (Hauser 1885), (Migula 1900)[10].

(*b*) The strains of the lactose-fermenting type, cultures 26, 32, 34, 35, 36 and 64 show considerable variation respectively in many of their characteristics. Each, however, is a facultative anaerobe and grows particularly well at 37° C. Five of the cultures are killed under laboratory conditions at 60° C. for ten minutes; the thermal death point of the remaining culture is not higher than 70° C. for ten minutes. As to their biochemical reactions, the cultures vary respectively as to the production of indol, the reduction of nitrates to nitrites, the Voges-Proskauer reaction and the Methyl Red reaction. Each of the six strains ferments to acid and gas the following carbohydrates: glucose, lactose, saccharose, mannite, arabinose and xylose. The reaction upon the remaining substances used is given in the report in tabulated form.

These six strains have been classified as typical and a-typical varieties of the *colon-aerogenes* group. (Escherich)[11].

Experimental Swelled Cans.—The next step was to attempt the experimental swelling of normal cans by inoculation with organisms already isolated. Three cultures were used; culture 37, a *B. vulgaris* type, and cultures 35 and 64, two varieties of the *colon-aerogenes* group. Normal cans have been inoculated with the three cultures respectively, a suitable number of controls receiving the same treatment minus the inoculation. In each case experimental swellings typical in every respect have been produced. The organisms subsequently isolated have been proved culturally to be identical with those used for inoculation, and the "Postulates of Koch" have been satisfied.

Subsequent Work

I returned to St. Andrews for at least two purposes: 1. to duplicate the experimental inoculations under commercial conditions; 2. to enquire into the possible sources of the causative bacteria.

1. Experimental Inoculation.—Some 200 cans were dealt with and after artificial inoculation with the strains used for the same purpose in the laboratories, the processes in vogue in the canneries were applied. The results of these inoculations are not yet available for publication.

2. Possible Sources of the Causative Bacteria.—On this phase of the work a considerable amount of data has now been accumulated.

Material Examined.—Some two hundred herrings were secured, usually first hand, from weirs, from fishing smacks, and from the canneries. The weirs included in the enquiry extended from Oak Bay in

the St. Croix river to the harbour of St. John, N.B. Inoculations were made from the intestines, and from the gills of these herrings. Samples were also taken of (*a*) water from the inside of various weirs; (*b*) mud from weirs at low tide; (*c*) water at low tide as used for pickle in the canneries; (*d*) seawater as run into cannery just before entering pickle tank; and (*e*) sea water dipped out of pickle tank one-half hour after the herrings had been put in.

Bacteriological Data.—This part of the investigation has been conducted partly on the Atlantic Coast from the Biological Station, St. Andrews, N.B., as the centre, and partly in the laboratories at Macdonald College (McGill), and the University of British Columbia respectively.

A paper by Sadler, Mounce, and Shanley[12] has been presented to the Royal Society of Canada at the May Meetings, 1919. In this paper we have detailed our cultural studies, and while the report of such is available therein, I will here give our results in brief.

The presence of gas-producing bacteria has been demonstrated in some or all of the material from each of the sources enumerated above. Ten strains of these bacteria have been studied in detail. These ten strains divide themselves clearly into three main groups:

I. Those which liquefy gelatine, but fail to ferment lactose to gas.

II. Those which do not liquefy gelatine, but which ferment lactose to acid and gas.

III. Those which do not liquefy gelatine, do not ferment lactose to acid and gas, but which produce acid and gas in glucose.

Based on their reactions in laboratory media, we have classified the organisms as follows:—[10], [13], [14].

GROUP I.—*Cultures 1, 5, and 22*, as types of *B. vulgaris*. (Hauser, 1885). (Migula, 1900).

GROUP II.—*Culture 2* as of type *B. acidi-lactici*. (Hueppe).
Cultures 9 and 15 as of the type *B. ærogenes* (Escherich).
Culture 17 as of the type *B. coli* (Escherich).
Culture 18 as of the type *B. communior* (Durham).

GROUP III.—*Cultures 8 and 24* as of the *Para-Gaertner* group (Savage).

Experimental Swelled Cans.—Up to the present, Cultures 5, 17 and 18 respectively of this series have been used for the purpose of inoculating normal cans of sardines. Typical swellings have been produced, the organisms have been recovered and the "Postulates of Koch" have been satisfied.

Other Observations.—In our paper[12] we make special mention of the reaction of certain of the strains of Methyl Red, and we have found it possible to make certain comparisons of the organisms of this latter series with the strains reported upon in the Interim Report[1].

Acknowledgments.—I desire to thank the Biological Board of Canada for permission to publish this paper. To Dr. F. C. Harrison of Macdonald College (McGill), and to the University of British Columbia respectively, I record my appreciation of the laboratory facilities of which it has been possible to take advantage.

REFERENCES.

[1]Sadler, Wilfrid. 1918. The Bacteriology of Swelled Canned Sardines. Sess. Paper No. 38A. Int. Rpt. 181-215, Ottawa.

[2]Sadler, Wilfrid. 1918. The Bacteriology of Swelled Canned Sardines. Amer. Jour. Pub. Hth. VIII. 3. 216-220.

[3]Prescott and Underwood. 1897. Micro-organisms and Sterilizing Processes in the Canning Industries. Tech. Quar. X. 1. 183-199.

[4]Macphail & Brúere. 1897. Discoloration in Canned Lobsters. Supp. No. 2. 29th Ann. Rpt. Dept. Marine & Fisheries, Ottawa.

[5]Obst. 1916. A Bacteriological Study of Sardines. Abs. Bact. I. 1. 50.

[6]Vaughan, V. C. The Infection of Meat and Milk. Trans. 7th Int. Cong. Hyg. III. Sec. III, 118-129.

[7]Savage, W. G. 1913. Bacterial Food Poisoning and Food Inspection. L.G.B. Rpts. 18 pp. 46. London.

[8]McWeeney. (Separate, undated) Meat Poisoning. Jour. Milk and Meat Hyg. Vol. I., pp. 1-31. London.

[9]American Public Health Assn. 1915. Standard Methods.

[10]Migula. 1900. System der Bakterien.

[11]Escherich. 1886. Darmbak des Sauglings, Stuttgart.
Migula. 1900. System der Bakterien.

[12]Sadler, Mounce, and Shanley. 1919. Further Work on the Bacteriology of Swelled Canned Sardines. Proc. Roy. Socy. Can. May Meeting.

[13]Jackson. 1911. Classification of the *B. coli* Group. Jour. Infec. Dis. 8. 241.

[14]Savage, W. G. 1912. The Inter-classification of the *Para-Gaertner* Group. Jour. Hyg. XII. 1, 1.

Diphtheric Wound Infections

J. G. FITZGERALD, M.B.[1]
Director, Connaught Antitoxin Laboratories and Assoc: Professor of Hygiene, University of Toronto
AND
D. E. ROBERTSON, M.B.[1]
Major C.A.M.C. Dominion Orthopaedic Hospital, Assistant in Clinical Surgery, University of Toronto, Junior Assistant, Surgeon, Hospital for Sick Children, Toronto

IN an article in the Journal of the Americal Medical Association, September 8th, 1917, we described an outbreak of wound diphtheria. This communication which is one of the few articles in the literature dealing with the question of *Epidemics*, of wound diphtheria, stimulated interest in the subject, and led to the publication of the results of several investigations notably those of Janes & Thomas[2]; and that of Adami and his collaborators[3]. Levy[4] has reviewed the literature in detail and reported several cases.

We were able to investigate carefully a considerable number of cases of diphtheric wound infections in the spring of 1917, as reported in our paper, and carried out, virulence tests and protection experiments on several of the strains of B. diphtheriæ isolated at that time. No endeavour was made by us to determine the virulence of every strain isolated nor was any attempt made to ascertain precisely the proportion of wound infections which were due to B. diphtheriæ in all of the cases studied. We contented ourselves with pointing out (1) that we had observed an epidemic outbreak of wound diphtheria; (2) that "it was extremely probable that patients with diphtheric wound infections were being returned to Canada from overseas"; (3) we suggested that a routine bacteriological examination of all suppurating wounds, be made in order that wound infections due to B. diphtheriæ might be discovered and appropriately dealt with; (4) finally, we recommended that diphtheria antitoxin be used in the general treatment of the condition, in addition to any local treatment which might be tried.

Sufficient time has now elapsed, and the expansion of literature dealing with this subject has been such, that a brief summary of the present situation is probably desirable. Adami and his co-workers in their paper reported that in an investigation of 306 cases of infection of open wounds they found only two which were caused by B. diphtheriæ, and were therefore led to the conclusion that: "there is a large body of evidence showing that even isolated cases of diphtheriæ infection of wounds are distinctly uncommon among the wounded overseas and complete absence of any evidence in Great Britain that these isolated

cases have acted as foci for the spread of infection to other wounded men. No evidence of a widespread infection of open wounds by diphtheria bacilli has been discovered in Canadian hospitals overseas in Great Britain."

We were not in a position to comment on the above nor indeed were we able to furnish conclusive evidence in our first communication as to the source of some of the diphtheric wound infections seen by us, that we observed an epidemic of diphtheric wound infections in military hospitals in Toronto during the spring of 1917, has been definitely established and is one of the very few reports of actual epidemic outbreaks of this condition, which has appeared in the literature. No evidence was brought forward by Adami to controvert our observations in regard to this outbreak.

The conclusion expressed in the paragraph quoted above, however, was very definitely opposed to the view that diphtheric wound infections contracted in England were being seen in men returned to Canada. It should be mentioned that the wounds observed by us were very largely in men who were returned to Canada from special military orthopædic hospitals in the United Kingdom.

Complete confirmation of the opinion expressed by Fitzgerald and Robertson has just been furnished by Janes and Thomas[2] in the paper mentioned above. These observers working as pathologists to the Granville Canadian Special Hospital, Buxton, England, have found that: "From those cases in which pure cultures were obtained 6.4% of open wounds in this hospital show infection with bacillus diphtheriæ". We may safely infer therefore that the conclusions here arrived at, entirely substantiate the inferences drawn by us as a result of our original observations.

Our recommendation that the routine swabbing of all long-continued suppurating wounds should be undertaken, has been strongly endorsed by Levy in his paper. That these cases are still being observed has recently been reported by Fraser[5] in Toronto. With routine swabbing of suppurating open wounds the danger of an epidemic of diphtheric wound infection is practically eliminated. That secondary cases of nose and throat diphtheria may arise from cases of diptheric wound infections has just been reported by Hartsell and Morris[6]. They describe an outbreak of throat diphtheria which occurred in a military base hospital in France. Infection remained a mystery until cases of wound diphtheria were discovered and with the establishment of strict quarantine and the adoption of most careful wound technic, the outbreak was brought under control.

We would again recommend therefore, that both in civil and military hospitals, a careful bacteriological examination be made of all suppurat-

ing open wounds. We have pointed out, and Janes and Thomas, also Hartsell and Morris, have expressed similar opinions, that clinically the diagnosis between diphtheroid or other ærobic and true diphtheric wound infections cannot be made. It is necessary therefore if the diagnosis of wound diphtheria is to be definitely established, that a careful bacteriological examination be undertaken which will include virulence tests and protection experiments. In this we are more rigid in our requirements than Adami and his associates, as expressed in paragraph three of their conclusions.

It may not be feasible to undertake virulence and protection experiments in every case, especially early in an epidemic outbreak, but the true character of the infecting micro-organism, should be definitely determined in at least a few cases at first, and if the outbreak is not almost at once controlled routine virulence and protection tests made. This was the method of procedure adopted by us in our work done in the spring of 1917 in military hospitals in M.D. No. 2, Toronto.

We would emphasize in conclusion that while an enormous amount of military laboratory work was occasioned by the publication of our first report, still we feel that any measures which are designed to lessen the convalescent period of wounded Canadian soldiers and facilitate their civil re-establishment were more than justified, and such was the motive that prompted the publication of our first communication.

BIBLIOGRAPHY.

[1]Fitzgerald and Robertson. The Journal of the American Medical Assoc. Sept. 8th, 1917, Vol. LXIX, pp. 791-793.

[2]Janes and Thomas. Canadian Medical Assoc. Journal. May, 1919, pp. 434-441.

[3]Adami and others. Bulletin of the Canadian Army Medical Corps. June, 1918.

[4]Levy. American Journal of Surgery. Vol. XXXI, Aug. 1917, pp. 193-195.

[5]Fraser. Verbal Communication.

[6]Hartsell and Morris. The Jour. of the American Medical Assoc. May 10th, 1919. LXXXII, pp. 1351-1353.

Mental Deficiency from the Preventive Aspect*

MEREDITH YOUNG, M.D., D.P.H.,
Medical Officer of Health and Medical Adviser M.D. Act Committee, Cheshire County Council

I.—CAUSES.

It may be taken as an axiom that if we want to prevent we must know causes. When we consider them the conditions which actually cause mental deficiency in infants the following list will be found to be a fairly complete one:—

Syphilis.

Alcoholism (especially paternal).

Meningitis (inflammation of lining membrane of brain and spinal cord).

Polio-encephalitis (inflammation of substance of brain and spinal cord).

Cerebral or cerebro-spinal palsies.

Physical shock to mother.

Toxæmia (blood poisoning from various causes) in pregnant mother.

Eclamptic or epileptic convulsions.

Traumatism (injury).

Asphyxia at birth.

Amaurosis (partial or total blindness without obvious lesion of eye).

Defective nutrition of pregnant or nursing mother or of infant.

Prolonged or instrumental labour (a somewhat doubtful cause *per se*).

Acute infections leading to toxæmia, meningitis, palsy, etc.

Consanguinity (query?).

Place in family (first children for all types of mental deficiency, last children for Mongolism alone).

Considerable disparity in ages of parents (query)?

The causes of mental deficiency are thus seen to be physical, psychical and social. It is with the physical that I am mainly concerned for this part of my subject and I propose to consider some of these conditions in detail. Take the case of microcephaly which produces both imbeciles and idiots. It is probable that the microcephalic brain, with its frequent associate micromyelia (imperfectly developed spinal cord), is the result of some toxic or morbid process in early foetal life or some disturbance of nutrition; the brain continues to present an immature foetal appearance

* Paper read at conference of Western Counties Branch, Central Association for Care of Mental Defectives. Reprinted from *The Medical Officer*, June 7th and 14th, 1919.

in its convolutions throughout life, even though it may grow to the size and weight of a normal adult brain.

Again, take what is known as lobal sclerosis—a condition which may be popularly described as an overgrowth of the padding material (neurogila) strangling like a weed the growth of the cells, fibres, and ganglia of the brain. This condition is due to the results of an inflammation or congestion or hæmorrhage due most probably to some defective process occurring during infancy. Porencephaly again (the formation of breaches, channels, clefts or hollows in the brain substance) is due to morbid processes during foetal life as well as to injuries or inflammatory diseases after birth; similar conditions can be induced in young animals experimentally. There are indications that this condition begins usually between the fifth and eighth months of intrauterine life.

Hydrocephaly (collection of fluid in or external to the brain substance) is often due to antenatal diseases continuing for some time after birth as well as to what is known as serous meningitis following on acute meningitis commencing in very early life. External hydrocephyal is usually tuberculous.

Acute anterior poliomyelitis (commonly known as infantile paralysis) and certain forms of post-natal encyphalitis (inflammation of brain substance) are undoubtedly infectious. They are unfortunately so insidious in their onset that their early stages may be unnoticed and they may lead to paralysis or idiocy or both.

Barron, writing in the American *Journal of Medical Science*, a few weeks ago, points out that meningitis (inflammation of the covering of the brain) occurring in infants at a very early age (under 5 months) is caused very largely by a micro-organism known as bacillus coli communis; the paths of infection have not yet been clearly established, but infection through the mouth by dirty fingers, playthings, dummy teats, bath water, etc., is to be regarded as more than potential. Holt had previously shown that the tubercle bacillus is responsible for from 55 to 70 per cent. of cases of meningitis at later ages in infants and young children. Breast-fed infants show a greater resistance towards both kinds of infection than bottle-fed.

2.—Early Signs.

I have alluded to the causative factors of mental deficiency for one reason in particular, and that is to show how vitally important a well-planned and thoroughly executed maternity and child welfare scheme, and particularly ante-natal work, can be in the prevention of mental deficiency, and how important it is that our workers (medical officers of clinic, health visitors, etc.), should be thoroughly acquainted with the very earliest signs of mental deficiency. One looks in vain through books

on maternity and child welfare for information on this point, but you will find the subject fully set out, for instance, in the following books:—Shuttleworth and Potts' "Mentally Deficient Children" (H. K. Lewis); Forsyth's "Children in Health and Disease" (John Murray); Hutchison's "Lectures on Diseases of Children" (Arnold—well illustrated); Still's "Common Disorders and Diseases of Children" (Oxford Medical Publications).

There are three reasons why special care should be taken to prevent disease or injury to the foetal or infantile brain.

(1) "The lesion affects the brain at a special and delicate phase of development to which there is nothing comparable in adult life. In the infantile brain many of the nerve cells are not yet myelinated and comparatively few of the nerve cells have reached structural perfection," or putting it very simply the nerve cells are immature and growing; they have got their insulating material formed, but the conducting wires have not yet developed and been coupled up with other nerve cells and fibres.

(2) "Infective toxic and traumatic lesions . . . . provoke reactions in the young and vigorous neuroglia (padding material) which is in the full activity of natural proliferation and which exercises its defensive functions much more powerfully and extensively than the neuroglia of the adult. In the adult the power of the neuroglia to proliferate becomes dormant and it is aroused only by the stimulus of pathological processes and with moderate intensity; in the young neuroglia the normal rate of growth is going on and consequently reactive proliferation is excited to an extreme degree." (Tanzi, "Text Book of Mental Diseases.")

(3) Nerve cells and fibres which are in process of growth if put under conditions likely to check their development are prevented from coupling themselves up with other centres and sub-centres of the brain and some of the centres and sub-centres remain as isolated and useless detachments because their lines of communication with the main centres have never been established.

The physician is surely the one to whom we should look for the earliest recognition of mental defect; but, as has been so ably pointed out recently by Sir George Newman, his education as a student has not been sufficiently concentrated on "the beginnings of disease." A medical student who has passed his final examination with honours could probably not say at what age a baby should be able to sit up without support or to distinguish a stranger from its father or mother, or be able to walk or talk, what movements of the limbs are natural and what unnatural and so forth. A mongol should be readily recognized by any practitioner familiarized with its characteristic appearance when a few days old, and most other conditions of mental deficiency should be diagnosed before

the age of 18 months. Here then is an obvious and easy accessory to preventive treatment.

3.—Heredity.

One definite conclusion of the Royal Commission on the Feeble-minded was "that both on the grounds of fact and of theory there is the highest probability that feeble-mindedness . . . tends strongly to be inherited." This gives us the key to our preventive problem.

Let us then consider first the case from the point of view of heredity.

As regards the influence of heredity Professor Tanzi says that if you follow out logically the pathological causation of imbecility and idiocy and write down the various conditions known to be at the root of the evil you will lop off so many branches from the trunk of the tree of heredity that the branches will form a clinical mass larger than the stem or trunk which is left, and he appeals to observers to cease to attribute to morbid heredity all the diseases of which they do not know the cause. This is not, however, the view taken by all, and it is certainly not an encouraging view from the preventive standpoint.

Writing in 1914 Dr. Tredgold said that "the average number of births to a marriage in England and Wales was 4.63, whilst the average number in markedly psychopathic families was 7.5," and, he remarked, "the disproportion obtaining between the birth-rate of the "fit" and the unfit has now become a problem of most serious significance to the nation." (Mental Deficiency.)

As regards the children of these marriages, you may be acquainted with Dr. Tredgold's special investigation in 1900 in Somersetshire. He found that taking 150 married aments 1,269 children were born, and of these children 456 were said to be mentally and bodily sound, 170 born dead, 315 had died at varying ages (largely in infancy), and of the remainder, 245 were mentally affected and 83 were diseased, paupers or criminals. (Loc. cit.) Add to this the notorious number of illegitimate infants passing annually through our workhouses and those leading lives of prostitution, and the case for prohibition of marriage in this class becomes overwhelming. There was a clause in the draft Mental Deficiency Bill enabling the detention in institutions of those in whose case it was desirable that they should be deprived of the opportunity of precreating children. There was also a clause prohibiting the intermarriage or attempt at the marriage of any defective within the meaning of the Act. Both of these provisions were struck out of the Bill during its highly obstructed progress through the Commons, and the prime causes of the perpetuation of this social taint were left untouched.

Surely it is a profanity of the marriage Sacrament when one or other of the persons concerned is in a mental state requiring "care, supervision

and control for their own protection and for the protection of others," or displaying (in the case of the moral imbecile) "some permanent mental defect coupled with strong vicious or criminal propensities."

The rock on which both these clauses split was, of course, the obsolete one interference with individual liberty. The war has blasted away great fragments of this rock, but when "D.O.R.A." has become a thing of the past we will find enough of the rock still there to give a foothold to a good many pedants and obstructionists. There is already a mild agitation in the country for an amending or supplementary Act to revive these two clauses, and I think a systematic campaign should be organized at once for the purpose.

4.—Sterilization.

If legislation were based on biological consideration alone there is no doubt that the sterilization or segregation of the mentally defective would be made compulsory very soon.

In the State of New York a board of examiners was created in 1912 with power to sterilize by operative means feeble-minded criminals and other defectives. The board examined about 200 persons and scheduled them as proper subjects for operation. Money to the extent of £3,200 was appropriated for the purpose by the Legislative, but the Supreme Court has now declared that the law enabling sterilization is unconstitutional, no State having the right under the Federal Constitution to deny to any individual equal rights under the law. There may be an appeal to a higher Court for a final ruling on the point. In other words a mentally defective person is regarded as one with legal rights equal to a normal person. This seems to me personally an illogical position to take because the mentally defective person can claim exemption from most penalties of the law by reason of his mental defect.

5.—Segregation.

Segregation may be enforced (under the Board of Control circular of February, 1918, defining urgent cases) in the following cases:—

(1) Women in receipt of Poor Law relief at the time of giving birth to an illegitimate child or when pregnant of such child: "The urgency is increased if they have venereal disease "

(2) Moral imbeciles suffering from venereal disease.

(*a*) Found guilty of a criminal offence;

(*b*) Imprisoned or detained by order of Court, etc., *or*

(*c*) In receipt of Poor Law relief when giving birth to an illegitimate child, etc.

(3) Young women at large or about to leave institutions and having no homes or bad homes, etc.

(4) Youths who are a source of local corruption.

One would like to know how many local authorities have reminded those concerned (Poor Law guardians, officers of the court, police officials, rescue homes, etc.) of these special provisions and have offered to take action in the cases covered by them. The money available for the care of such cases is, I think, not being taken up as it should be, and we shall be very heavily fined for our neglect in years to come. I doubt, too, if every local authority has done or is doing everything possible to complete their census of the mentally defective and in particular to sift and grade the mentally defectives in Poor Law institutions, asylums, reformatories, rescue homes, and other State or charitable institutions. This surely is one of the initial steps in a preventive campaign.

6.—Better Opportunities for Study.

Our study of the various types of mental defectives should be pursued under better conditions than at present in the case of persons not having institutional care. There should be a psychiatric clinic in every large town properly equipped for the diagnosis and grading of defectives and particularly for the study of borderland cases. Defectives under supervision or guardianship should at least be encouraged to come to such clinics at regular and frequent intervals, much as consumptives now attend our tuberculosis dispensaries. The physician in charge should keep careful records on systematic forms and should enquire closely into the character of the supervision and training of the defectives so that a national record will eventually be available, not merely of numbers, but of progress under varying schemes. Experience and statistics are the foundation of legislation and we can only secure the best legislation by making sure of the best experience and statistics. In connection with all such clinics experimental work should be encouraged, teachers and social workers should be privileged to attend, and grants from the Board of Control should be available towards expenditure in this connection. In connection with all such clinics there should be skilled social workers who can aid the physician by getting the histories of the defectives and who can enquire into what we may call "contact cases," *i.e.*, members of the same family, and especially the younger members, so that the condition may come under control at the earliest possible moment.

The social worker has a responsible work in front of him, for it would be his aim to secure a better adjustment between the defective and his environment. Herbert Spencer said that life was a series of adjustments of inner relations to outer relations, and if we believe this, then we must educate the defectives so as to improve their capacity for adjustment. The problems facing the social worker are difficult ones, and this makes

it all the more necessary that before entering on work with mentally defectives adequate training should be secured.

7.—Mental Hygiene.

Mental hygiene is, or ought to be, of just as much consequence as general hygiene. When we find a child with hereditary tendency towards tuberculosis he receives special physical care so that the onset of the disease may be checked. But do we extend the same care towards a child with a psychopathic heredity? Not in the lower walks of life, I think. We ought to do so, however, and so long as we do not we are failing in one of the first duties in the preventive programme.

We should probably get earlier on to the track of the mentally defective school child if teachers were instructed to report to the school medical officer for further investigation such cases as repeated truancy, stuttering or other speech defects, "tics," incorrigibility, repeated fits of temper, destructiveness, abnormal mischievousness, and other pathological behaviour.

The establishment of special classes and of special schools for the mentally defective has, of course, been largely hindered by the war, but in a war which has lasted so long as this one and which has knocked so many things off their bearings, we shall have to take great care that the dust is not allowed to linger too long on those things which have had to be shelved away; there is a great danger that they will have been put on one side for so long that they will be forgotten.

And I should like to remark by way of parenthesis here that the education of the backward and of the feebleminded should not be an attempt to fill up with information, but a formation of habits—correction or elimination of bad ones and training in good ones. If we can attain this in the young the social problems of later life will at least be simplified. And the education must be individualized and not prescribed by rule of thumb.

8.—Compulsory Notification.

Another step which might be taken in the preventive campaign is the compulsory notification by medical practitioners of cases of mental deficiency living under such circumstances as to call for action by the local authority under the Mental Deficiency Act, 1913 (*e.g.*, cases which are neglected, abandoned, ill-treated and so forth), with the payment of a fee to the practitioner concerned for such notification. This would not only be of great assistance to all local authorities but would act as stimulus to many which are now lethargic. If in addition it were made the duty of each local authority to furnish a copy of all notifications so received by them to the Board of Control that Board could then call on

the local authority for a report on the circumstances of the case and for a statement of the action taken by them; a very useful piece of administrative machinery would then be set in action.

I have considered the question whether or not any such scheme of compulsory notification could be usefully applied in the case of persons other than medical practitioners, but I do not see that one could safely extend the proposal at present. Those most likely to come into contact with mentally deficient persons are relieving officers, school teachers, health visitors, school nurses, probation officers, police, officers in charge of reformatories, midwives, and so on. These persons already have a medical officer to whom they can appeal and on whom they can place the responsibility, and I think they should prefer themselves not to shoulder the responsibility. Social workers, unless specially trained, might make mistakes which would react unfavourably on their utility in the sphere which they have chosen. Other persons who have to deal with the mentally defective such as special school teachers and care officers need not be included because the duty has already been performed for them.

I think there is a probability that we shall see a slight increase in the numbers of the mentally deficient before long owing to the influences of strain and mental shock on the war-time mothers. Maternity and child welfare schemes cannot I fear do very much to lessen this however much and however sympathetically our workers get into the homes and the hearts of their protégés. But we can prepare to tackle the problem in case it should arise.

Summary.

The points on which I wish to lay special stress are briefly as under:—

1. The importance, from the point of view of mental hygiene, of maternity and child welfare work, and particularly of ante-natal work.

2. The education of the physician, the health visitor and school teacher, the social worker, and all others likely to come in contact with very young children in the beginnings of mental deficiency.

3. The special care, from the earliest possible age, of the child with a bad mental tendency.

4. The continuation of an advocacy for the prevention of the perpetuation of the mentally unfit.

5. Increased activity in the segregation of the special cases of mental defect.

6. The establishment of psychiatric clinics.

7. The compulsory notification of cases of mental deficiency coming within section 2 of the Act of 1913.

A Conference on Social Hygiene

ON May 29th and 30th a most important conference was held in Ottawa for the purpose of devising ways and means for combating venereal diseases in Canada. The conference met at the call of the Acting Premier, Sir Thomas White and the members present represented practically all parts of Canada. The Y.M.C.A., Y.W.C.A., Red Cross, Knights of Columbus, Salvation Army and other national agencies sent delegates and the various provincial health departments were strongly represented. A feature of interest was the presence of Major Jason S. Joy, Director of the American Training Camp Activities Commission and Capt. L. G. Mook, Director of the Law Enforcement Division of the Commission. These gentlemen, representing the United States War Department were able to give the conference valuable information as to the Social Hygiene Programme inaugurated by the United States Government during the war.

The conference was opened by His Excellency the Governor-General, who extended a welcome to the delegates on behalf of the Dominion Government and took the opportunity of informing them of the sympathy of the Government in the object of the conference. The meeting was then addressed by the Hon. W. N. Rowell, President of the Privy Council who outlined the circumstances under which the conference had been called. Mr. Rowell referred to the gravity of the situation as regards the widespread incidence of venereal diseases in Canada among civilians, and also to the fact that attention had been drawn to this condition of affairs by investigations undertaken by the military authorities. A previous conference of health officers called in February at the instance of the military authorities had recommended that this large conference be called to discuss a comprehensive scheme for dealing with the situation. The chair was then taken by General Fotheringham and the business of the conference proceeded.

During the first day most of the time was taken up by a series of addresses by various authorities. During the morning, Rev. Herbert Symonds, Chairman of the Committee of Sixteen of Montreal, spoke on the subject of "The Civilian Aspects of the Venereal Disease Problem," while Captain Gordon Bates, Secretary of the Advisory Committee on Venereal Diseases for No. 2 Military District, spoke on "The Army and Venereal Disease."

These addresses dealt with the medical, social and legal aspects of the subject and were calculated to summarize the problem for the benefit

of the conference. During the afternoon further addresses were given by General Fotheringham, Director General of Medical Services, Lieut.-Col. J. W. S. McCullough, Chief Officer of Health for Ontario, Major Jason S. Joy and Captain J. G. Mook of the Training Camp Activities Commission.

Following these addresses a resolution was passed by the Conference calling the attention of the Dominion Government to the necessity for provincial subsidies for fighting venereal diseases and to the great desirability of the removal of all restrictions on the importation, manufacture and sale of all products used in the treatment of syphilis.

The conference then broke up into three committees, on the formation of a National Council for Combating Venereal Diseases, on the Coordination of Social Agencies, and on Federal and Provincial Cooperation. The remaining portion of the first and second days was taken up by the meetings of these committees. During the morning of the second day Sir Robert Borden who had just returned from England, addressed the conference briefly, and later an adjournment was made in order that the members might take the opportunity of viewing "The End of the Road", one of the official United States Government films depicting various aspects of the venereal disease question.

A number of recommendations were made to the Government by the conference in regard to various measures which may be undertaken to combat venereal diseases in Canada and it is anticipated that with the organization of the Federal Department of Health many of the resolutions will be put into effect. One important immediate result of the conference was the formation on the spot of a Canadian National Council for Combating Venereal Diseases. The constitution of this new organization appears elsewhere in the JOURNAL. The officers are as follows:—

President: Chief Justice Riddell, Toronto.

Vice-Presidents: Dr. J. Halpenny, Winnipeg; Mr. W. E. MacClellan, Halifax; Lt.-Col. J. W. S. McCullough, Toronto; Hon. Dr. Wm. F. Roberts, St. John, N.B.; Mrs. Judge Murphy, Edmonton; Dr. M. M. Seymour, Regina; Rev. Dr. H. Symonds, Montreal; Principal Vance, Vancouver.

Treasurer: Mrs. A. M. Huestis, Toronto.

General Secretary: Capt. Gordon Bates, Toronto.

Members of Board: Dr. J. D. Pagé, Quebec; Rev. Dr. J. G. Shearer, Toronto; Mrs. L. A. Hamilton, Toronto; Dr. C. K. Clarke, Toronto; Major H. K. Haywood, Montreal; Dr. O. C. J. Withrow, Toronto; Miss Jean Gunn, Toronto; Dr. Peter Bryce, Ottawa; Major J. G. Fitzgerald, Toronto

The following are the names of those attending the conference:

Mrs. A. M. Huestis, Toronto, Advisory Committee, M.D. No. 2.

Mrs. L. A. Hamilton, Toronto; Convenor Women's Activities Committee, Advisory Committee on Venereal Diesases, M.D. No. 2.

Miss Ethel Lovell, proxy for Lady Falconer, Dominion Council, Y.W.C.A.

Miss Ella Grant, Canadian National Association, Trained Nurses.

Mr. T. H. Wills, Hamilton, Hon. Sectary Hamilton Branch Advisory Committee on Venereal Diseases.

Dr. Helen MacMurchy, Inspector of the Feeble-minded, Ontario.

Mr. L. M. Wood, Canadian National Institute for the Blind, Toronto.

Dr. E. J. Mullally, Knights of Columbus Army Huts, Montreal.

Dr. F. Montizambert, Director-General of Public Health, Sanitary Advisor of the Dominion Government.

Mrs. J. E. Smillie, Convener Public Health Committee, National Council of Women.

Miss Helen R. Y. Reid, Canadian Patriotic Fund, Montreal.

Dr. Douglas D. Storms, Venereal Diseases Committee, Hamilton.

Lieut.-Col. Gideon Miller, Salvation Army, Toronto.

Col. J. McMillan, Chief Secretary, Salvation Army, Toronto.

Rev. Herbert Symonds, Chairman, Committee of Sixteen, Montreal.

Dr. Edmund E. King, President, Academy of Medicine, Toronto.

Dr. J. A. Hutchinson, President, Public Health Association, Westmount, P.Q.

Dr. J. G. Fitzgerald, Advisory Committee on Venereal Diseases, Toronto.

Dr. P. H. Bryce, Chief Medical Officer, Dept. of Immigration, Ottawa.

Surgeon-General G. Stirling Ryerson, Canadian Red Cross Society.

Dr. C. K. Clarke, Canadian National Committee for Mental Hygiene, Toronto.

Col. I. H. Cameron, C.A.M.C., Toronto and Ottawa.

Dr. H. B. Small, Canadian Medical Association, Ottawa.

Dr. Chas. A. Hodgetts, Medical Adviser, Comm. of Conservation, Ottawa.

Dr. J. D. Pagé, Chief Medical Officer, Port of Quebec.

Mr. C. W. Cavers, Ottawa.

Mrs. J. C. Hanington, Victorian Order of Nurses.

Dr. M. M. Seymour, Commissioner of Health, Saskatchewan.

Dr. Thomas Gibson, President, Victorian Order of Nurses.

Lt.-Col. D. A. Clark, A.D.M.S., Militia Dept., Ottawa.

Mr. Owen Dawson, Secretary, Committee of Sixteen, Montreal.

Dr. A. K. Dawson, Secretary, Committee of Sixteen, Montreal.

Dr. A. K. Haywood, Montreal, General Hospital, Montreal.

Mr. J. Bradford, Y.M.C.A. and Committee of Sixteen, Montreal.

Dr. Wm. Hutchinson, Dept. of Soldiers' Civil Re-establishment.

Dr. G. B. Melvin, Chief Medical Officer of New Brunswick.

Hon. Dr. W. F. Roberts, Minister of Health, New Brunswick.

Dr. Art. Simard, President, Superior Board of Health, Province of Quebec.

Dr. A. H. Desloges, General Medical Superintendent, Insane Hospital of the Province of Quebec.

Dr. J. G. Shearer, General Secretary, The Social Service Council of Canada.

Dr. W. H. Hattie, Provincial Health Officer, Nova Scotia.

Dr. Heber C. Jamieson, Alberta Department of Health, Edmonton.

Major A. J. Lasier, Chatham, N.B.

Mr. D. B. Harkness, General Secretary, Social Service Council of Manitoba.

Rev. W. H. Vance, Vancouver, B.C.

Mr. Fred J. Smith, National Council, Y.M.C.A., Toronto.

Dr. O. C. J. Withrow, Secretary, Dept. of Sex Education, National Council of Y.M.C.A., Toronto.

Mrs. J. S. Robson, Chairman, Women's Dept., Repatriation Committee, Ottawa.

Mrs. L. Kniel, Factories Inspector, Alberta.

Mr. A. E. S. Smythe, Chairman, Advisory Committee on Venereal Diseases, M.D. No. 2.

Dr. L. G. Mook, Capt., Sanitation Corps, U.S.A.; representing Commission on Training Camp Activities.

Major J. S. Joy, F.A., U.S.A.; representing Secretary of War, U.S.A.

Dr. H. E. Young, Provincial Board of Health, British Columbia.

Col. J. W. S. McCullough, Chief Officer of Health, Ontario.

Major-General J. T. Fotheringham, D.G.M.S., Ottawa.

Capt. Gordon Bates, Advisory Committee on Venereal Diseases, M.D. No. 2, Toronto.

Constitution of the Canadian National Council for Combating Venereal Diseases

1. NAME.

The name of this organization shall be The Canadian National Council for Combating Venereal Diseases.

2. AIMS AND OBJECTS.

(1) To combat Venereal Diseases by whatever means seem desirable.

(2) To encourage and assist the dissemination of a sound knowledge of the physiological and moral laws of life in order to raise the standard both of health and conduct.

(3) To co-operate with existing associations, to seek their approval and support, and to give advice when desired in order to provide the constituent social measures which are basic in the solution of this problem.

(4) To promote such legislative, social and administrative reforms as are relevant to the foregoing aims and objects.

(5) To provide accurate and enlightened information as to the prevalence of these diseases, and as to the necessity for early treatment.

(6) To promote the provision of greater facilities for their treatment.

(7) To increase the opportunities of medical students, practitioners, and trained nurses for the study of these diseases.

(8) Inasmuch as the conference at which the decision to organize this Council was made was called by the Government of Canada, this Council shall hold itself ready to render such service and assistance to the Government as it may from time to time require.

3. MEMBERSHIP.

The Council shall be composed of two classes of members, (1) Organizations, (2) Individuals.

(1) Organizations. The following classes of organizations may be received into membership in the Council as hereinafter provided.

(*a*) Any orgainzation in Canada which is or is intended to be Dominion-wide in its activities. Such organization shall pay a fee of not less than $40.00 per annum during the period of such membership.

(*b*) Any organization the scope of which covers or is intended to cover the area of any province of Canada. Such organization shall pay a fee of not less than $20.00 per annum.

(*c*) Any organization in any local community in Canada the objects of which include any of the objects of this Council. Such organization shall pay a fee of not less than $5.00 per annum.

(2) Individuals. Any individual in sympathy with the aims and objects of this Council, and who is of the age of 21 years may as hereinafter provided, be elected to any of the following classes of membership.

(*a*) Founders. Any person who shall during any financial year of the Council contribute a sum of not less than $500.00 toward the funds of the Council may be enrolled as a founder of the Council.

(*b*) Life Members. Any person who shall during any financial year of the Council contribute a sum of not less than $100.00 toward the funds of the Council may be enrolled as a life member of the Council.

(*c*) Sustaining Members. A sustaining member shall pay a fee of not less than $25.00 per annum, during the period of such membership.

(*d*) Active Members. An active member shall pay a fee of not less than $5.00 per annum, during the period of membership.

(*e*) Associate Member. An associate member shall pay a fee of not less than $1.00 per year. Associate members shall be entitled to receive bulletins and reports printed and issued by the Council.

4. Application for Membership.

Any organization or individual desiring to be enrolled as a member of this Council shall make application to the Board of Directors for such enrollment, specifying the class of membership desired. The Board of Directors shall have power to approve or reject any such application. In case of approval the Board of Directors may enroll such applicant as a member of the Council subject to report for ratification at the general meeting of the Council next following.

5. Basis of Representation.

The following shall have the right to attend and exercise voting privileges at each annual or other general meeting of the Council.

(*a*) Eight accredited representatives of each Dominion wide organization.

(*b*) Four accredited representatives of each provincial organization.

(*c*) One accredited representative of each Local Community organization.

(*d*) Founders.

(*e*) Life Members.

(*f*) Sustaining Members.

(*g*) Active Members.

(*h*) The officers of the Council elected at the annual meeting next preceding such member.

6. Officers.

The officers of the Council shall be a President, Vice-Presidents, Treasurer, General Secretary and such other Secretaries as the Council may decide.

7. BOARD OF DIRECTORS.

The Board of Directors shall consist of the President, Vice-Presidents, Treasurer, General Secretary, and nine other members elected annually at the annual meeting of the Council.

The Board of Directors shall appoint a business executive from its own membership to which it may relegate its duties between meetings of the Board.

8. COMMITTEES.

(*a*) The Council shall, at each annual meeting, elect a committee representing each Province consisting of not less than three or more than seven members. Each such committee shall be known as The .....Committee of the Canadian National Council for
Name of Province
Combating Venereal Diseases, and subject to the supervision of the Board of Directors shall have oversight of the work of the Council within that Province, encouraging and correlating the activities of existing social agencies and especially of those organizations which are members of the Council.

(*b*) The Board of Directors shall appoint, not necessarily from its own membership, a Medical Committee, a Propaganda Committee, a Literature Committee, a Service Committee, a Finance Committee, a Social Service Co-operative Committee, which may be divided into sub-committees such as those dealing with Industrial Conditions, Housing and Recreation, and such other Committees as may from time to time be thought advisable.

9. MEETINGS.

The Board of Directors shall arrange for the annual meeting of the Council at such time as it may deem wise. It may, at any time, convene a special general meeting of the Council, and shall call such general meeting on the receipt of a requisition therefor from twenty members of the Council; such meeting shall be held within twenty-eight days of the receipt of such requisition.

10. DUTIES OF BOARD OF DIRECTORS.

The Board of Directors shall advise the Council with regard to the policies to be pursued; it shall carry out the policies determined by the Council; it shall report to the Council at its annual meeting; it shall arrange the procedure for the meetings of the Council and for its own meetings; it shall meet not less frequently than once every six months.

11. AMENDMENTS.

Amendments to this Constitution may be made at any annual meeting of the Council or at any general meeting called for such purpose,

provided two-thirds of the members present vote in favour thereof, and provided that any such amendment shall have been previously considered by the Board of Directors.

OFFICERS.

The following officers were elected at the organization meeting of the Canadian National Council for Combating Venereal Diseases, held at Ottawa, on Friday, May 30th, 1919:

President—Chief Justice Riddell, Toronto.

Vice-Presidents—Dr. J. Halpenny, Winnipeg; Mr. W. B. Maclellan, Halifax; Col. J. W. S. McCullough, Toronto; Hon. Dr. Roberts, St. John, N.B.; Mrs. Judge Murphy, Edmonton, Alta.; Dr. M. M. Seymour, Regina, Sask.; Rev. Dr. Symonds, Montreal; Principal Vance, Vancouver.

Treasurer—Mrs. A. M. Huestis, Toronto.

Members of Board—Dr. J. D. Page, Quebec; Dr. J. G. Shearer, Toronto; Mrs. L. A. Hamilton, Toronto; Dr. C. K. Clarke, Toronto; Major A. K. Haywood, Montreal; Dr. O. C. J. Withrow, Toronto; Miss Jean Gunn, Toronto; Dr. Peter H. Bryce, Ottawa; Major J. G. Fitzgerald, Toronto.

The following were appointed *pro tem* Chairmen of the Committee for the Provinces—Dr. R. S. Jenkins, Charlottetown; Dr. W. H. Hattie, Halifax; Dr. Desloges, Montreal; Dr. G. G. Melvin, Fredericton; Dr. Hodgetts, Ottawa; Mr. D. B. Harkness, Winnipeg; Hugh Dobson, Regina; Dr. H. C. Jamieson, Edmonton; Dr. Young, Victoria.

Port Said cleaned up by British Army*

Stringent Law Enforcement Program transforms city that was reputed to be Wickedest in World

PORT SAID, which has long had the reputation of being the wickedest town in the world, has been cleaned up under British military administration, according to newspaper accounts, and is declared now to be as demure as Brooklyn, N.Y.

Port Said was one of the strategic points in the British and Turkish military schemes, and was made the centre of a large British military concentration. It was immediately realized that venereal conditions there would be fatal to military efficiency.

Colonel P. G. Elgood, the Base Commandant, therefore undertook to clean it up. He is quoted as follows:

"The gambling houses were closed when war was declared, so I was never troubled with them. My biggest problem was the Rue de Babel. All the houses in it were owned by foreigners, all of whom were under the protection of their consuls. Many of them had their life's savings invested in the houses in the Rue de Babel, and it was not an easy thing to root them out.

"I gave them notice that the women would have to get out. We told them they could either leave the country or move to Cairo or Alexandria. We didn't think the war would last as long as it did, or it is possible that we might have given them the single instruction to get out of the country. It was easier then to get out of Port Said by sea than it is now.

The Two Schools

"In this step I had the approval of General Murray, then the commander of the Egyptian Expeditionary force. General Murray is a devout Christian and in his attitude toward the vice problem and its relation to the troops he took the ethical view that vice should be put beyond the reach of men. Throughout my long fight to clean up Port Said, I had to deal with the two schools, the school which looks upon vice as wrong and the so-called practical school which believes that vice, being necessary, should be regulated. The latter school, from the first, deplored my closing up Port Said. They said I would merely force the men into the Arab quarter, and far worse results would ensue.

Reprinted from the Social Hygiene Bulletin, July 1919

"Port Said is sharply divided into the European quarter and the Arab quarter. I determined to drive out the last vestige of vice from the European quarter and then I put the Arab quarter out of bounds to men. That is the condition which prevails to-day. So far as I know, there is no vice in the European quarter; there may be, there doubtless is, an occasional woman who adds to her earnings by vice, but I have not considered that her existence has any relation to my task of making Port Said safe for the troops. There is not a single house of prostitution anywhere in the European quarter. Of that I am certain."

The only difficulty described in connection with the law enforcement régime occurred when ten thousand Australians of the desert mounted corps returned to Port Said after two years' service in the desert.

They are well known to be an independent lot who do not pay much regard to the police, but most of them were apparently kept out of the Arab quarter, and for those who went in a prophylactic station was established.

It is stated that among the ten thousand Australians, only thirteen new venereal infections were reported in Port Said.

Continuing his description of the methods used in law enforcement, Colonel Elgood said:

Consuls Give Aid

"When the owners of the houses in the Rue de Babel went to their consuls to protest against the closing of the houses, the consuls who were charged of course with the protection of the interests of their fellow citizens, could have made a great deal of trouble. But they had taken in the situation and behaved very well. They represented to the owners of the houses what the needs of the time demanded, and a situation which might have become a very long and involved one, was averted. The women left the town and the houses were closed.

"I then got after the solicitors in the streets. This was a very difficult problem, due both to the nature of the Arabs we had to deal with and the fact that Egypt had no laws which made procuring a punishable offense. I got around the absence of Egyptian law on the subject by instituting a military court, and I had gotten the last of these street procurers punished before I learned that in England there is no law against orderly street soliciting, and that all my convictions were illegal. By that time, however, I had achieved the end I had aimed at, and not only were the houses shut up but the streets were cleaned out. You will understand how thoroughly I had the streets cleaned out, when you think that for two years Port Said's streets were in absolute darkness after night, due to the possibility of air raids. We had a fight almost equally hard to get the town darkened after night,

but we finally succeeded and for two years there were the possibilities of reviving in darkened streets all the vice of peace time. Even during those two years, however, we kept the streets as clean as you will find them.

"I then took up the drink question. The sale hours I fixed at from 1 to 3 p.m. and from 6 to 9 p.m., and you will find that café owners respect them to the second. They know that if they are caught selling a drink out of hours, they will be called to account immediately. They know that to deprive one of them of his soldier trade by placing an 'Out of Bounds' sign on his café, is to hit him very hard, and they know that it is easier for a camel to pass through the eye of a needle than for an 'Out of Bounds' sign, once placed, to be lifted. They know, too, that if they are caught selling a drink to a soldier when an 'Out of Bounds' sign has been placed on them, they will be closed instanter, and to close them is to ruin them.

The Future

"I presume that when martial law ends in Port Said, the old days will be resumed. The houses will open in the Rue de Babel, and the town will resume its old position as 'the wickedest sea-port in the world'. That, however, is none of my affair. As long as Port Said is under martial law, it will be safe for the men who stop here.

"Cleaning it up has been a long hard fight. The ethical men and the practical men have each in turn praised me and condemned me. I did not attempt to regulate vice in Port Said as the so-called practical men urged me to do, for the reason—one reason—that under the conditions under which regulation is usually practised, it cannot make vice safe. There was only one thing for me to do, if I were best to conserve the man power under my command. That was to stamp out vice utterly. That we have done."

The Social Background.

The Policy, Spirit and Programme of the Neighborhood Workers Association.

F. N. STAPLEFORD, M.A.
General Secretary.

MAN has been described as a political animal. His associations are not alone that great mass of casual and unpremeditated contacts which make up so large a part of life, but also include those definite self-conscious organized associations through which he definitely sets out to achieve something. The object of his planning is usually to change some part of his social or physical environment so that it will be more to his liking.

The Neighbourhood Workers Association is based upon that instinctive craving of people of like mind, actuated by a common purpose, to get together and pool their experience, and to increase the range of their influence through organization. Organization is but the vehicle through which human volitions and ideals register themselves and make themselves effective.

The N.W.A. brings together its members for a very specific purpose. It is not interested in the poetry of the Victorian era or archaeological remains in the Nile Valley, nor in any one of the thousand other objects of human interests which are each admirable in themselves. It confines its attention purely to social conditions in the narrower sense of the term, as they occur in our own community, and has the very definite purpose of changing certain present factors of our city and country which experience has found to be injurious and harmful. It has as its object the removal of present suffering and the changing of conditions so that the causes of this suffering may be permanently eradicated. It waves no red flag, but believes in the essential soundness both of heart and judgment of the citizens who make up our democracy, and believes that when there is an intelligent understanding both of the actual handicaps under which so many people must live, and of the means available for the removal of these handicaps, that wise and humane social action will be taken. It stands for the scientific relief and the progressive eradication of poverty for the multiform modern ways in which child welfare must express itself, for the intelligent treatment and study of the great complex of problems which cluster about the treatment of the dependent and delinquent classes.

Policy.—The policy of the N.W.A. is based upon the belief that there is a definite place of usefulness in social work, for voluntary workers and for professional workers who have been perhaps only partially trained. Social work is skilled work of a very delicate and important character and there are organizations and individuals who realize this so keenly that they would shut off from any avenue of usefulness, all save a few highly paid and highly trained specialists.

The N.W.A. is filled with the essentially democratic belief that there are large powers of usefulness lurking in a very wide circle of people and an effort should be made to call this out and direct it into useful channels.

The war has shown in a surprising way the rich adaptability and resourcefulness of human life. People under pressure find that they are capable of doing many things the talent for which they did not believe themselves to be possessed. A large number of members of the N.W.A. are, of course, professional workers but these are reinforced by a very much larger group of those who have a contribution of personal effort, energy and social enthusiasm to make in a voluntary capacity. The crude idea, however, that good will is alone sufficient finds no tinge of sympathy in the policy of the N.W.A.

The N.W.A. is an army of some 200 organizations and of more than 600 workers who unite in order to make themselves as efficient as possible in the carrying on of their important work.

By deliberate policy the N.W.A. is also strictly non-denominational in its method of work. That does not mean that it is non-religious. Religion furnishes the motive power for probably most of the membership. But religion is not made the subject of discussion or controversy. Each is content to respect the beliefs of the other and without any individual sacrifice of principle, to work with others for the common good. Co-operation on the social side, however, has the important result of creating a bond of sympathy and mutual respect among those who differ widely in matters of religion and theology.

Spirit.—The genius then, of the N.W.A., lies in this spirit of co-operation. We respect each other's work too much to be willing to do the slightest thing to injure that work. There is then a very definite code of ethics being developed in regard to the relations of social workers to each other, and to the families whose interests it is their primary business to advance. One organization will refrain from cutting in on the work of another. Antagonism and misunderstandings are obviated by frank, free personal contact.

The spirit of the N.W.A. is a spirit of comradeship. Woodrow Wilson in an address given to a college fraternity in 1919, expresses very exactly the intellectual by-products which come from such association. "Its effects are atmospheric. They are wrought by impression, by associa-

tion, by emulation. The voices which do not penetrate beyond the doors of the classroom are lost, are ineffectual, are void of consequence and power. No thought will obtain or live there for the transmission of which the prevailing atmosphere is a non-conducting medium. Contact companionship, familiar intercourse is the law of life for the mind." There is a task so large to be achieved that one who is faced with any duty of accomplishment in regard to that task, wishes to feel the ties of fraternity with all others who share that task in common.

In the effort to secure allowances for mothers, better housing conditions, or more adequate measures for child welfare, the same group of people met and met again in this continuous warfare, until they are knit together by a very real tie of comradeship and loyalty. This is one of those valuable, unestimated by-products of the N.W.A. system.

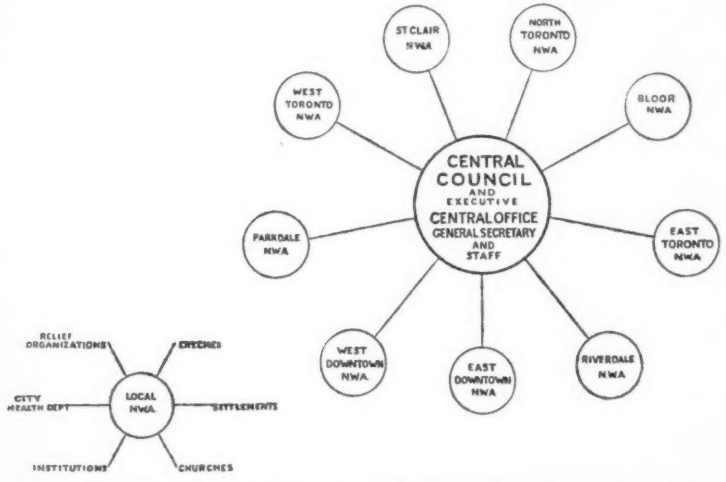

Diagram of relation of Central Council and Central Office to District Association.

The spirit of the organization is also scientific. The foundation of all the work is the Case work with the individual family. This involves individuality of treatment, a definite study of the concrete which is far removed from vague theorizing or an elaborate system of armchair logic. Medical science is built up largely on a foundation of bed-side practice. Social case work similarly starts in a definite study of individual families who for some reason or other are not socially normal. Generalizations are inevitable and necessary. There is a definite body of social science growing up. This however, draws its strength from that contact with reality which is based upon an intensive study of individual cases. There is of course, a type of mind perfectly content with trying to meet the

needs of families as these occur, without any attempt to go to the root. But the atmosphere of the N.W.A. is not conducive to such inconclusive thinking. The stimulus of association creates the urge to analyze causes as well as to deal with effects. Social case work gives a basis and affords the justification for social legislation and other forms of social action. There are those who object to this whole scheme on the basis that it is not radical enough. It is necessary to point out that we are under the obvious necessity of being radical *intelligently*. Scrapping social machinery is comparatively easy, but the task of creating, without widespread suffering and injustice, a new set of machinery which will function more perfectly than of old, is a task of great magnitude and complexity. Let the change be as rapid as possible, providing it is based on an intelligent study of data, and is really a scientific formulation of the needs of the situation.

Programme.—The world in general is interested chiefly not in the question of policy or spirit which may actuate the organization. The question usually asked is "What is the organization doing?" The ordinary individual is distinctly not interested in the fine points of the constitution, but simply asks "Will the horse trot?" The final vindication then, of the N.W.A. must be in the definite work which it accomplishes for the public good, and here I have no intention of tabulating a long list of achievements of the organization. Beneficial results are usually obtained by the cooperation of many factors, and to claim sole credit is to expose the organization not only to the charge of vanity, but to that of untruthfulness. There are, however, some very definite pieces of work which the N.W.A. has been able to accomplish and anyone who thinks over the history of the past few years and of the past winter, would probably conclude that the organization is amply justifying its existence and is coming to be an increasing power in the city as a force which makes for social righteousness.

There is that contribution which each individual organization is making within its own sphere, and if this work were to be dropped it would be social disaster of a very acute character. There is also the work which is done by these local organizations in corporate or organized capacity through the vehicle of the N.W.A. Through their own work they touch the concrete and actual; through the wider organization they make their influence felt in broad currents of public opinion and social action.

Much work remains to be done. This is no time for complacency or self-congratulation. Rather the call is to unite all forces, fuse them with a common purpose and determination, to make Toronto a cleaner, safer, happier city for all its citizens, even the least of its little ones. We cannot be complacent when we think that at this very moment there

are women carrying the tremendous burdens of family support, as well as of family nurture and care; of children who are growing up under influences that corrupt them from their youth; of defective and feeble-minded young people left too largely to the chances of fate; of the people who are hungry to-night; of the people who have no employment; of people who have no friends.

There is a new social order a-building which shall more closely represent the ideal of liberty, fraternity and equality. It is to this task that the social worker must set his hand.

Victorian Order of Nurses

1. The Victorian Order of Nurses of the City of Toronto cared for 1,400 maternity cases and made over 35,000 visits during the year. They attended to nearly one-eighth of the maternity cases of the entire city, and Miss Hall, the lady superintendent, 281 Sherbourne St., who is anxious to increase the staff from 18 to 30 nurses, will be glad to receive letters from, and give information to qualified applicants.

2. The work of the Victorian Order of Nurses in the city of Toronto has increased to such a volume that it is decided to practically double the staff of nurses. The V.O.N. nurses are at present housed at the head-quarters building, 281 Sherbourne Street, but with the additional staff, the premises will have to be enlarged or new quarters found. Miss Hall, the lady superintendent, will be pleased to receive applications.

3. The Victorian Order, Toronto branch, have recently opened two new suburban districts and the nurses have been provided with automobiles, with which to make their calls, and it has been found that this has been of considerable help to them in making more visits and covering greater distances. We are given to understand that Miss Hall, 281 Sherbourne St., is anxious to add several nursing assistants to her staff.

4. The Victoria Order of Nurses of Toronto are in receipt of many letters of appreciation for their work during the influenza epidemic, and Miss Hall, the lady superintendent, is congratulating herself and feeling very grateful that none of the nurses were afflicted with the disease. Doctor Hastings, M.O.H. of the city of Toronto, writes: "I have to express to the V.O.N. our keen sense of gratitude for their valuable co-operation during the influenza epidemic in this city".

The Provincial Board of Health of Ontario

Cases and Deaths from Communicable Diseases reported by Local Boards of Health for the Month of June, 1919.

COMPARATIVE TABLE.

Diseases.	1919 June Cases.	1919 June Deaths.	1918 June Cases.	1918 June Deaths.
Smallpox	68	2	15	0
Scarlet Fever	310	6	196	4
Diphtheria	273	25	136	13
Measles	104	0	1426	8
Whooping Cough	63	2	277	11
Typhoid Fever	22	7	24	6
Tuberculosis	228	183	172	147
Infantile Paralysis	7	5	1	0
Cerebro-spinal Meningitis	4	4	9	8
Influenza	38	17	0	0
Acute Influenzal Pneumonia	20	19	0	0
Acute Primary Pneumonia	132	129	0	0
Total	1269	399	2256	197

(Note.—Last three diseases were not reported in 1918.)

VENEREAL DISEASES REPORTED BY MEDICAL OFFICERS OF HEALTH

	1919 June Cases.	1919 May Cases.
Syphilis	108	98
Gonorrhœa	154	129
Chancroid	10	5
Total	272	232

(Note.—Syphilis caused four deaths, three being babies under 10 months).

CASES OF SMALLPOX REPORTED FOR MONTH OF JUNE, 1919.

	Cases.	Deaths.
Brantford	1	0
Ottawa	1	0
St. Thomas	2	0
West Lorne	3	0

CASES OF SMALLPOX REPORTED FOR MONTH OF JUNE, 1919.—*Contd.*

	Cases.	*Deaths.*
Alborough Tp.	7	0
Kingston	1	0
Belleville	3	0
Harwich Tp.	18	1
Wallaceburg	6	0
Darling Tp.	1	1
Widdifield	1	0
Springer	2	0
Walsingham S. Tp.	3	0
Peterboro	3	0
Kitchener	3	0
Guelph	7	0
Hamilton	1	0
Beverley Tp.	1	0
Toronto	1	0
St. Joseph's Novitiate	1	0
Scarboro' Tp	1	0
Etobicoke Tp.	1	0
Hawkesbury Tp.	1	0
Total	69	2

The following biological products were distributed free of charge by the Provincial Board of Health during the month of June, 1919:

Smallpox Vaccine	6,315	points.
Diphtheria Antitoxin	9,842M	units
Diphtheria Antitoxin	737	syringes
Anti-meningitis Serum x 20 c.c.	32	vials
Anti-meningitis Serum x 20 c.c.	10	outfits
Tetanus Antitoxin	304,000	units
Tetanus Antitoxin	25	syringes
Pertussis Vaccine	Boxes of 14 c.c. ea.	126
	Bottles of 10 c.c. ea.	68
	Bottles of 25 c.c. ea.	11
Silver Nitrate Solution	Boxes,	45
Typhoid and Paratyphoid		5181 c.c.

Correspondence

Editor PUBLIC HEALTH JOURNAL:

SIR:—Newspaper reports inform us that a Department of Public Health may be established in Canada. If so, would it not be logical for that Department to consider among the many fields for efficiency in public health, the establishing in each city of disinfecting or sterilising stations for mail bags. Should not all mail bags be disinfected each time they come from abroad; also, local bags at stated times? Those bags from the continent of Europe I would consider will want watching in the near future.

Disease is no respecter of persons. A Cabinet Minister, doctor or merchant may receive a letter that has been packed tight in a bag containing a letter from a house in which a contagious disease was raging. We are aware that disease germs can be so conveyed. It is quite possible that as mail bags go from one end of the country to the other end, that they may cause the spread of disease and epidemics. There were very many reasons given for the quick spread of the Spanish Influenza, perhaps this was one case.

Such a department may also see the wisdom of asking the railroad companies to substitute a covering for seat cushions in their cars that will not harbor microbes and dust. Having travelled considerable on our railroads I could retail some incidents that I have witnessed in our rail coaches which are not condusive to sanitation or elimination of the White Plague. Most of us are aware that if we strike those plush seats hard with our hand that the imprint of the hand will be left on the seat. It is obvious that with the motion of the car going over the points that a quantity of this dust and perhaps disease germs may be set free to float in the air of the cars and be inhaled by a passenger. It is not a common occurrence for people to return from a trip suffering from a cold or sore throat—inhaled germs in the cars, no doubt.

Such an act should include the cleaning of all cornices and woodwork inside a car with a vacuum cleaner at the end of each run when the cars had been occupied for two or three days. Also, the sterilising of blankets provided in the sleeping coaches. The curtains also should be sterilised once per week. Hearing a fellow-passenger coughing best part of the night short time ago caused me to wonder if any of the disease germs coughed up went into those curtains or blankets. Such conditions when our country was thinly populated forty or fifty years ago was not so serious as they are to-day. I am of the opinion, sirs, that reform started on these lines will cause the people of Canada to bless the Department of Public Health.

Yours truly, J. S. K.

News Items

The following despatch appeared in *The Globe*, Toronto, on July 15th, 1919: Lieut.-Col. John A. Amyot, M.B., C.M.G., of Toronto, a returned soldier, has been appointed Deputy Minister of the new Department of Health, the establishment of which was authorized in a bill passed by the House of Commons at the session just closed. Col. Amyot will commence his duties in Ottawa in about two weeks' time.

Col. Amyot is professor of hygiene of the University of Toronto, and director of the laboratory of the Provincial Board of Health and has had wide experience in public health work.

He went overseas in May, 1915, with No. 4 Canadian General Hospital, University of Toronto, and on his arrival in England, owing to his well-known experience in sanitation, he was sent to France to take command of the Sanitary Section of the First Canadian Division in June, 1915. After some months there he was placed in charge of the sanitary organization of the Canadian Corps and was, some months later, asked for by the headquarters authorities of the Second British Army, where he was appointed A.D.M.S., Sanitation, in September, 1916, taking charge of the sanitation of the area occupied by that army, which extended from the North Sea to well below the Ypres salient and Armentieres.

He was mentioned in despatches December 31, 1917,and was awarded the C.M.G. January 1, 1918. For the last period of his overseas services he was consultant in sanitation to the Canadian forces in England and returned to Canada May 24, 1919.

Dr. Fred A. Adams, D.P.H. of the City Health Department, Toronto, has been appointed Medical Officer of Health of the Border Municipalities, in which are included Windsor, Walkerville, Ford City, Ojibway, Sandwich, Sandwich East and Sandwich West.

The addresses on Public Health at the 49th annual meeting of the Canadian Medical Association in Quebec in June were given by Lieut.-Col. J. W. S. McCullough and Dr. J. D. Page in English and French respectively.

The next annual meeting of the Canadian Medical Association will be held in Vancouver either one week before or one week after the meeting of the Canadian Public Health Association in Edmonton. This will permit eastern members of the two associations to be present at both meetings.

Order-in-Council, P.C. 1168, dated June 23rd, 1919, has authorized payment of war service gratuity to members of the naval and land forces of Canada who were discharged before November 11, 1918, under the same regulations as govern the granting of gratuity to members of these forces who were retired or discharged after that date.

Sir Arthur Newsholme of London, England, delivered an address on "Public Health Problems of the Immediate Future," in Convocation Hall, University of Toronto, early in June. Sir Arthur has accepted for next year the Chair of Public Health in the School of Hygiene and Public Health in Johns Hopkins University.

Courses leading to the Diploma of Public Health are being offered in various Canadian universities this fall for the first time since war was declared. McGill University, the University of Toronto and Western University, London, Ontario, all provide these courses.

A very successful "Baby Week" was held recently in Brampton, Ontario, under the direction of Miss Mary Power of the Provincial Board of Health of Ontario. Evening meetings which were largely attended were addressed by Lieut.-Col. J. W. S. McCullough and others.

Major T. A. Lomer, D.S.O., of Ottawa, has returned from overseas and has resumed his duties as Medical Officer of Health of Ottawa.

Lieut.-Colonel Robert Wodehouse, District Officer of Health, Fort William, has received recognition for valuable services rendered overseas, having been made an Officer of the British Empire Order.

Lieut.-Colonel Allen Rankin, C.A.M.C., Provincial Bacteriologist of Alberta has been made a Companion of the Order of the Bath in recognition of valuable services rendered in France.

Dr. George D. Porter has resigned his post as Officer Commanding the Divisional Laboratory, M.D., No. 2, after three and a half years' service in the C.A.M.C.

Editorial

A Social Hygiene Programme for Canada

ELSEWHERE in the present issue appears a summary of the proceedings of the Social Hygiene Conference held at the instance of the Dominion Government in Ottawa on May 29th and 30th. At this conference many important health promoting agencies were represented and for the first time under government auspices an opportunity was given for the discussion of all aspects of the social hygiene problem. Important papers were read by well-known authorities on various phases of the question and a great deal of important work was accomplished in committee. The conclusion of the conference should form a valuable basis for the programme to be inaugurated under the new Federal Department of Health.

One of the most important results of the Conference was the formation of a Canadian National Council for Combating Venereal Diseases. This new organization while working under a name similar to that of the British organization will be of somewhat wider scope in its operation and will probably also undertake work similar to that of the American Social Hygiene Association whose special problem is not the treatment of venereal diseases, but the investigation of the social factors at the bottom of the whole problem.

It must not be forgotten in this respect that the factors producing venereal disease are essentially social and that until they are fully understood little will be accomplished. The question of housing, wages, recreation and education must all be considered and some effort made to remedy existing conditions. This will mean investigations of various types and it will be fitting that the Canadian National Council should suggest or even initiate such work. It is most gratifying to learn that immediately after the Conference the Dominion Government decided to permit the Provincial Board of Health of Ontario to manufacture arsenical products for the cure of syphilis and that in the estimates for the Federal Department of Health there appears an item of $200,000 for combating venereal diseases. It would seem as though "A Social Hygiene Programme for Canada" were off to a good start.